St Lucia’s tourism landscapes: Economic development and environmental change in the West Indies

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Summary: St Lucia’s economy has transitioned since the late 1960s from predominantly agricultural to increasingly tourism-dominated. This study examines the direct and indirect influences of tourism development on the St Lucian landscape. Five primary causal interactions were found. First, construction of tourism infrastructure has led to alteration and loss of forested and agricultural lands, especially near the coast. Second, growing demand for fresh produce from hotels and restaurants has encouraged smallholder and estate farmers to shift cultivation from conventional crops to more intensively-farmed vegetables and ornamentals. Third, a number of surviving agricultural estates have transformed themselves into eco-friendly tourist attractions by restoring and protecting natural forests and cultural heritage assets on their properties. Fourth, government has enhanced forest lands acquisition and protection to support eco-tourism and secure fresh water supplies to sustain ongoing tourism development. Finally, tourism-related employment has drawn labour out of farming, accelerating agricultural decline and reforestation. Tourism development and impacts are concentrated near the coast, yet it has contributed to net reforestation and protection of forests in the island’s uplands. That said, factors other than tourism also continue to have widespread influence on the landscapes of St Lucia.

Key Words
AGRICULTURE ECOTOURISM REFORESTATION ST LUCIA

Introduction

Tourism has gradually overtaken agriculture as the primary economic sector throughout much of the Caribbean, and St Lucia is no exception. The consequences of this transition for the economies and environments of small islands, in particular, are enormous (McElroy, 2003). For some islands, the agrarian landscapes that predominated for centuries have in only a few decades been transformed into landscapes where tourism development now dominates (Weaver, 1988; 1993a; 1993b; Koster & Seaborne, 2003). Profound changes in agriculture have coincided with rapid growth of tourism in the region, but it is unclear how and to what degree changes in the two sectors are causally interrelated. It
thus remains uncertain how tourism development has and continues to shape wider patterns of land use, agriculture and forest cover on small Caribbean islands.

This paper explores these issues, drawing upon findings from a larger study of agriculture, forests and land use change in St Lucia. Specifically, this study identified significant, post-1950 changes in the landscapes of two island watersheds and has sought to explain these changes in terms of relevant socio-economic causes. The development of tourism has imparted causal influence in a variety of ways, but tourism development is by no means the only or even most important causal factor shaping land use, agriculture and forests across St Lucia’s landscape. This paper attempts to tease-apart tourism’s particular role, but those interested should seek related readings for a more complete story (see Walters, 2012; 2016; Walters & Hansen, 2013).

Tourism and environment in the Caribbean
Tourism is the world’s largest industry (McElroy, 2003) and the Caribbean is among the most tourism-intensive regions (Weaver, 1993a; Duval, 2004a; Pattullo, 2005). Modern mass tourism began in the 1950s with the advent of commercial jet flights and growth in the sector surged in the 1960s as a number Caribbean countries moving towards political independence actively encouraged tourism as a means to gain a degree of economic independence (Duval, 2004b). Tourism visits to the region continued to grow strongly thereafter, driven by near continuous growth in the number and relative size of hotels built and cruise ships plying Caribbean waters (Bleasdale & Tapsell, 2003; Wood, 2004). By 2002, tourism was the single largest earner of foreign exchange for 16 of 30 Caribbean countries (Meyer, 2006).

The environmental impacts of tourism have become more apparent as the industry has grown, but surprisingly little research has been done on the subject (Buckley, 2012). Impacts include the loss of productive farmland and destruction of natural habitats and species from built infrastructure and excessive visitor usage, plus degradation of coastal marine waters and habitats like coral reefs from sedimentation, excessive visitor usage, and hotel and cruise ship sewage (Wood, 2004; Buckley, 2011).

Since the late 1980s, support has grown for more sustainable ‘ecotourism’ that seeks to minimize negative impacts on local communities and the environment, while better enabling benefits to accrue to local people and conservation initiatives (Butler, 1991; Weaver, 1993a; Stronza, 2001; Conway, 2004; Found, 2004; Spencely, 2008; Cousins et al., 2009; Buckley, 2010; 2012). Ecotourism products range from relatively ‘hard’ activities that target outdoor adventure enthusiasts (e.g., scuba diving, hiking) to ‘softer’ experiences that facilitate access to places of interest for a wide audience (e.g., chartered bus and boat tours to unique natural or cultural-heritage sites) (see Weaver, 1993a; 2004).

Governments and the tourism industry in the Caribbean have increasingly embraced sustainable tourism, although often more in rhetoric than in practice (Weaver, 1993a; 2004; Woodfield, 1998; Bleasdale & Tapsell, 2003, Wilkinson, 2004). The Caribbean’s environmental assets are its greatest appeal. Heavy tourism development risks despoiling these assets, so it makes economic sense to protect them (Dixon et al., 2001;
But nature and cultural heritage tourism also create opportunities to enhance and diversify tourism offerings (Weaver, 1993a, 2004; Harrison, 2007). Natural amenities like coral reefs, tropical forests, waterfalls and scenic vistas have great appeal, but tourists are also intrigued by the region’s agricultural history and drawn to the unique aesthetic of its farmed landscapes (Found, 2004; Meyer, 2006).

### Linkages between tourism and agriculture

Many Caribbean analysts, including Nobel Laureate-economist, Arthur Lewis, have argued that development of non-agriculture industries like tourism should have spillover benefits for local farmers by creating new, more diversified markets for their products (Hope, 1986; Momsen, 1998; Timms, 2006). Yet, tourism’s expected boost for local agriculture has borne only modest fruit (Meyer, 2006). In fact, tourism often simply out-competes agriculture for scarce land and labour resources (Weaver, 1988; Conway, 2004).

Tourism infrastructure is commonly built on prime agricultural land, especially where these are found near the coast (Conway, 2004), which inflates local land values, discouraging their use for agriculture given its relatively low returns on capital (Meyer, 2006). Tourism also draws labour out of agriculture by creating alternative employment that is relatively secure, well-paid and higher in prestige compared to farming (Hope, 1986: 48; McElroy & de Albuquerque, 1990; Stronza, 2001; Torres & Momsen, 2004; Harrison, 2007). Finally, imports of food and beverage products to serve tourists may encourage a gradual shift in food preference by the local population, further undercutting local producers (Momsen, 1998; Meyer, 2006). These various effects are often magnified on smaller islands with heavy tourism development given their relatively scarce land and labour (Weaver, 1988).

These trends have been countered by efforts to encourage sourcing of local farmed products by hotels and restaurants (Bleasdale & Tapsell, 2003). Markets for street vendor food and locally-processed, ‘food merchandise’ (rum, spices, hot sauce, etc.) are also lucrative and offer high value-added (Momsen, 1998). Hotels have quality and supply requirements that are difficult for local producers to meet, and farmers are often lacking the financial capital, social network connections, and management/business skills needed to upgrade their farm operations and engage effectively with hotel purchasers (Torres & Momsen, 2004; Meyer, 2006; Timms, 2006). Nonetheless, a combination of outreach to the tourism sector, farmer training, and policy incentives (e.g., food import quotas) has increased local food sourcing in St Lucia and elsewhere (Momsen, 1998; Conway, 2004; Harrison, 2007).

### Study area and methods

Detailed descriptions of methods can be found in Walters (2012) and Walters and Hansen (2013). Briefly, the field study component focused on two watersheds, one on the west side (Soufrière) and one on the east side (Mamiku) of the island (Figure 1). Soufrière abuts the UNESCO World Heritage Pitons Management Area [PMA], but only a small fraction of PMA lands actually falls within the Soufrière watershed (GOSL, 2008).
Near-comprehensive, aerial-photo coverage for both watersheds (1966, 1977, 1992 and 2004) plus recent satellite imagery (2009/13) were combined with systematic, field-based surveys of vegetation and land use conducted in 2006 and 2015 to assess trends in land use/status over time (Walters, 2016; Walters & Hansen, 2013). Information about land tenure, land holding size, and land use history of each site was sought through interviews with local farmers and by consulting official land registry maps.

Interviews and primary archival work were conducted in 2006, 2007 and 2015. In 2006/7, 43 farmers (37 smallholders and 6 estates) were interviewed within the two study watersheds using a semi-structured format to document their knowledge of agriculture, land use, etc., and to interrogate their interpretations of changes in these. Sampling included multiple smallholder farmers from each of the six rural settlements within the

**FIGURE 1: St Lucia showing study area watersheds**
two watersheds and the owner/manager of each of six active agricultural estates. In 2015, return-visits were made to all active agricultural estates and interviews conducted with owners/managers. To understand larger trends within and beyond the two watersheds, more than 30 key informants (government officials, industry and NGO representatives, island historians, etc.) were interviewed using a semi-structured format, and extensive archival investigations were conducted of relevant published and unpublished reports and statistics, notably the Government of St Lucia’s [GOSL] annual *Social and Economic Review* (1983-2014) and its decadal *Agricultural Census* (GOSL, 1974; 1996; 2007).

**The growth and ‘greening’ of tourism in St Lucia**

Modern tourism in St Lucia began in the 1960s with the advent of charter tours from the UK and construction of the first large hotels (Renard, 2001). A significant boost came in 1970 with the onset of the Rodney Bay development, financed by the Caribbean Development Corporation. This major infrastructure project catalyzed the transformation of the northern, Castries-Gros Islet corridor as St Lucia’s primary tourism hub (Sahr, 1998). By 1979, there were seven large hotels and a number of small hotels on the island (World Bank, 1979), making St Lucia a significant but still not (comparatively speaking) a leading Caribbean tourism destination (Koster & Seaborne, 2003; McElroy & de Albuquerque, 1988).

The Government had thus far taken a relatively hands-off approach to tourism development, dealing with individual proposals on a project-by-project basis (Wilkinson, 2004). However, following a decade of only modest tourism growth in the 1980s and concern about the fate of the island’s banana industry in light of unfolding World Trade Organization trade challenges (Figure 2), the GOSL assumed a more direct and pro-active role supporting growth of tourism. In 1994, the St Lucia Tourist Board—a statutory company tasked with tourism marketing—initiated a major international advertising campaign targeting niche markets, including honeymooners, nature tourism and business, and show-casing high-profile events like the annual St Lucia Jazz Festival (GOSL, 1995; Meyer, 2006). The Tourism Investment Act of 1996 provided tax holidays for investments and waived import duties on building materials, articles and equipment for tourism projects (GOSL, 1996b; Mycoo, 2005). Major investments in tourism infrastructure were also made, including enhanced shopping amenities and upgrades to port docking facilities to enable access of more and bigger cruise ships to Castries Harbour. The centerpiece, La Place Carenage, opened in 1997 and a surge in cruise ship arrivals followed (Figure 3).

An innovative component of St Lucia’s tourism promotion is the St Lucia Heritage Tourism Programme [SLHTP], an attempt to promote eco-friendly tourism, one of the pillars of the country’s tourism growth strategy (Renard, 2001; Duval & Wilkinson, 2004). The SLHTP was initiated in 1998 with financial support from STABEX, a fund of the European Union created to facilitate the economic transition of Lomé countries affected negatively by liberalization of the EU banana market. Through this, the non-government Heritage Tourism Association of St Lucia [HERITAS] was created with
membership of owners of heritage site attractions and other agencies (National Trust, Forestry Division, etc.). HERITAS created a code of best practices, provided marketing support, and coordinated the purchase of public liability insurance for its members, a key pre-requisite for participation in the lucrative market for cruise ship visitors.

Until the 1990s, tourism development in S Lucia had mostly concentrated along the Castries-Gros Islet corridor on the north-end of the island (Sahr, 1988). With its iconic Pitons and unique cultural-historical landscapes, the Soufrière area on the west coast had long been a tourist draw, but its development was constrained by rugged topography, limited port facilities and poor road access. This changed in the late 1980s with up-grading of the rugged west coast highway which enabled easier vehicle access from Castries Harbour, a pre-requisite for transport of day-trippers from visiting cruise ships. Soufrière thereafter became a premier destination for the rapidly-growing cruise ship tourist market and more attractive for hotel development (France, 1988; GOSL, 2002).

**Direct landscape impacts of tourism infrastructure**

The construction of hotels and other tourism infrastructure (restaurants, gift shops, cruise ship facilities, etc.) in St Lucia has had a variety of environmental impacts, including destruction of natural habitats, loss of productive farm land, erosion of soils and coastlines, and pollution of coastal waters. With near-continuous growth in tourism since the late 1980s, the number of sites affected has multiplied, especially near the coast where most development has occurred. In fact, managing the direct impacts of tourism is seen by
Representatives as the most pressing environmental challenge now facing the country. This represents a marked shift in priorities from less than two decades ago when environmental concerns were fixated on agricultural activities and their mostly upland impacts (deforestation, soil erosion, pesticide pollution).

The Soufrière area, in particular, emerged as a major destination for tourism in St Lucia during the 1990s, following improvements in road access and the construction/refurbishment of several high-end, resort-hotels, including Anse Chastanet (1988), Jalousie (1992) and Ladera (1992), plus several smaller guesthouse villas. There are now five significant resort-hotels and about a dozen small hotel-villas, each located either adjacent to the shore or on nearby hillsides and ridge-tops that possess unobstructed views of the Pitons. Some of these hotels were built on farmland, but others were built on rugged, forested lands that had either never been farmed or were long-ago abandoned from farming (see Walters & Hansen, 2013). Local habitat impacts have been significant, yet the cumulative direct footprint of these tourism developments in the Soufrière watershed is only a small fraction (approx. 2-4 percent) of the watershed landscape. The Mamiku watershed on the east coast has been even less directly impacted by tourism development, with only one small hotel and a botanical garden built there, with a combined areal footprint of 1-2 percent of the landscape.

That said, some of these developments have created significant environmental problems and controversies. Most notably, hotel and related developments within the UNESCO-PMA (but outside the Soufrière watershed) have threatened the area’s status as a World Heritage Site (France, 1998; Pattullo, 2005; GOSL, 2008; Nicholas & Thapa, 2013; UNESCO, 2014). Also, erosion from building and road construction plus pollution of nearby waters from inadequately treated hotel sewage has contributed to the
degradation of near shore water quality and coral reefs (Begin et al., 2014). The extensive reefs in and around Soufrière Bay are environmentally significant and sustain significant dive-tourism (Conway & Lorah, 1995).

Tourism’s influence on farm production

From the 1960s-1990s, St Lucian agriculture policy was pre-occupied with those crops that formed the backbone of its exports: bananas especially, but also cocoa and copra. The promotion of farm diversification and so-called ‘non-traditional’ crops were points of ongoing discussion, but rarely commanded policy attention. In the 1980s, there were modest attempts to diversify through initiatives like the Tree Crop Diversification Programme and Small Farmers Assistance Development Programme, but the intent of these was to promote crop diversification with export potential in mind (e.g., fruits and spices).

The potential to expand domestic agricultural markets by encouraging local sourcing from hotels and supermarkets had been discussed for some time by GOSL officials and foreign economic advisors (e.g., World Bank, 1983; 1988). Momsen (1986, cited in Conway, 2004) found modest increase in the amount of local food sourced by St Lucian hotels from 1971-1985. Still, the issue did not garner serious policy attention until the early 1990s when it became undeniable that the UK’s protected market for bananas was coming undone (see Figure 2). There followed a clear shift in focus towards more active promotion of tourism development and agricultural diversification and means by which to link the two (GOSL, 1995).

The Ministry of Agriculture in collaboration with private sector and non-government organizations has applied a variety of strategies to address the challenge. It partnered with the St Lucia Hotel Association in 1994 to promote the ‘adopt a farmer’ programme to facilitate direct marketing interactions between farmers and hotels (Momsen, 1998; Meyer, 2006). Beginning in 1998, it implemented the Rural Economic Diversification Project and St Lucia Rural Enterprise Initiative which provided technical and capital assistance to farmers to enable their shift out of bananas to other crops (GOSL, 1999; Timms, 2006). A project of Oxfam International also provided support for production, marketing and sales arrangements through assistance to island farmer cooperatives, including the Belle Vue Cooperative which serves members in the Soufrière area (Meyer, 2006; GOSL, 2007b).

Progress has been slow and plagued by ongoing challenges, notably inconsistencies of product quality and supply (GOSL, 1999). Nonetheless, Timms (2006) identified a variety of marketing arrangements that had been established between local farmers and hotel purchasers in St Lucia. A significant, recent initiative entails the training and certification of farmers to strengthen links between them and local commercial buyers. Coordinated by the St Lucian grocery conglomerate, Consolidated Foods Limited [CFL], with technical and training support of the Ministry of Agriculture, this programme has created a cadre of elite, smallholder farmers who serve as regular contracted suppliers to CFL stores and the hotel clients who buy through them. This initiative is at least partly responsible for the sizable growth in sales of local vegetables to supermarkets and hotels since 2006 (GOSL, 2014: Appendix, Tables 11-13).
The production of fresh vegetables is the most notable indicator of change here because these were not traditionally grown in abundance in St Lucia, yet tourists demand them. The national agricultural censuses reveal sharp increases from 1974 to 1996 and from 1996 to 2007 in the percentage of farms growing vegetables (GOSL, 1974; 1996; 2007). My interviews of farmers confirm this trend for Soufrière and Mamiku and also reveal an increase in the cultivation of cut flowers for sale to the tourism market (Table 1). In fact, improved local market opportunities for these products were among the few notable bright spots cited by some farmers in an otherwise dismal assessment of changes to agriculture in St Lucia.

Vegetable farming can be lucrative, but it is management-intensive compared to most conventional crops and uses relatively less land. Vegetable farmers often employ irrigation and greenhouses to assist production, techniques rarely applied to conventional crops. Interviews suggest vegetable farming to be concentrated on the largest and smallest farms. Specifically, 8 of 10 large farms (>10 acres, including 5 of the 6 estates) and 11 of 15 small farms (<2.0 acres) grew mixed vegetables, but only 4 of 17 mid-sized farms (2-10 acres) did so. On large farms, only a very small portion of total land was typically used for growing vegetables, but it often dominated land use on small farms. In the wider landscape, vegetables and ornamental plants occupy relatively little space compared to bananas, tree crops and even provisions. In fact, the cultivation of vegetables has in part contributed to a broader shift away from extensive hillside farming to more intensive farming on flatter, more accessible sites (Walters & Hansen, 2013).

### TABLE 1: Changes to crop cultivation as cited by farmers

<table>
<thead>
<tr>
<th></th>
<th>Estates (n=6)</th>
<th>Smallholders (n=28)</th>
<th>Total (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reductions in cultivation:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bananas</td>
<td>3</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Coconuts</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Provisions (root crops)</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Cocoa</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Fruit crops</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Increases in cultivation:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>3</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Provisions (root crops)</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Fruit crops</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Ornamentals (cut flowers)</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Cocoa</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

*SOURCE: Based on farmer interviews conducted in 2007*
Interviews showed vegetable farming to be more commonly practiced in Soufrière (19 of 29 farmers) than Mamiku (4 of 14), findings consistent with the 2007 National Agriculture Census (Table 2). This difference appears to mainly reflect the relative proximity and tighter linkages between growers and local tourism and grocery store markets in Soufrière. For example, much of the fresh produce now grown on estates in Soufrière is consumed by tourists who eat in restaurants owned by those estates (see below). In one notable case, a local hotelier acquired an underutilized agricultural estate and restored about half of its land to grow organic fruits, vegetables and ornamental plants for his two hotels. As of 2015, the estate employed 25 people and produced about 60 percent of all fruits and vegetables plus most of the ornamental plants consumed by the hotels. Similarly, long a prominent export crop of estates in Soufrière, cocoa beans are now often grown for local sale to tourists in the form of ‘cocoa sticks’ (GOSL, 2002). Among smallholders in Soufrière, some were certified and sold produce to CFL (who, in turn, sell to hotels), but most sold their vegetables opportunistically to a variety of local venues, including hotels, supermarkets, and weekend public markets in Soufrière and Castries.

Ecotourism and the ‘greening’ of agricultural estates

‘Tourism pays. There is no more money in agriculture’,
anon. estate owner, Soufrière 2007

The agricultural estate sector in St Lucia has been in decline since the late 1800s when increasingly competitive export markets for their dominant export crop (sugar) drove many into bankruptcy while forcing others to radically diversify crop production (WIRC, 1897). Coconuts (for copra), limes, cocoa and bananas have since figured prominently on the island’s estates, but all of these have similarly struggled in the face of increasingly competitive markets in which the high costs of local production (especially labour) and limited economies of scale place St Lucian agriculture at great disadvantage (Welch, 1993; 1996). Only a fraction of the original estates have survived and many today do so thanks largely to tourism.

No other region of the island has so many surviving estates as Soufrière, where almost half the land area still falls under ownership of a dozen estates. By contrast, Mamiku has one large active estate which occupies 30 percent of the total area. Estate land use thus has a continued, dominant influence on the landscapes of both watersheds. Since the 1980s, agriculture’s footprint has been shrinking while tourism’s has grown as more estates re-configured themselves as tourism destinations. To do so, estates have pursued several but not necessarily mutually exclusive strategies. One has been to capitalize on the large and growing number of day-visitors who mostly originate from cruise ships. For them, estates offer set-price, package deals (brokered through tour operators who provide transport) that include a buffet lunch and usually some kind of natural or heritage tour on their property (Table 3). Several estates have built restaurant facilities and gift shops for this purpose, and made sizable investments in amenities including botanical gardens, mineral baths, nature trails, outdoor adventure infrastructure, and heritage restoration (e.g., refurbishing old sugar mills, plantation houses, etc.). Other estates, targeting the stay-over tourist market, have built hotels that range from modest to
high-end/boutique accommodations, include bar-restaurants and other guest services, and are typically situated within lush garden or natural surroundings on the estate.

For many estates, tourism is a profitable alternative to conventional agriculture given the weak export markets and given that tourist visits are relatively structured, predictable and entail better returns on both land and labour. For example, the relatively high cost of farm labour has contributed to agricultural decline in St Lucia (see below), yet many estate workers who would otherwise have been let-go have been kept-on to perform the new tasks of landscaping, food gardening and hotel/restaurant service associated with tourism. Also, estates save costs by growing much of the fresh produce consumed in their restaurants on their own lands.

These various tourism-related infrastructures and amenities are often prominent in the landscape and the focal points of human activity, but in most cases still occupy only a small fraction of an estate’s total land area. In terms of the wider landscape, every estate examined has shown a net gain in the amount of land under forest since the 1980s (Table 3). In fact, with few exceptions estate lands in both Soufrière and Mamiku are now dominated by natural forest, agro-forest or some mixture of the two (Walters & Hansen, 2013). Various factors have contributed to this, but every estate that has re-configured as a tourism destination now promotes itself in terms of its natural beauty and

### TABLE 2: Percentage of farm holdings growing selected vegetables in Soufriere and Micoud Districts.

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Soufriere District (n = 439)</th>
<th>Micoud District* (n = 1,968)</th>
<th>Saint Lucia (all districts) (n = 9,448)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cucumber</td>
<td>45.3</td>
<td>20.9</td>
<td>29.8</td>
</tr>
<tr>
<td>Sweet pepper</td>
<td>41.2</td>
<td>18.9</td>
<td>26.1</td>
</tr>
<tr>
<td>Tomato</td>
<td>46.9</td>
<td>15.3</td>
<td>23.4</td>
</tr>
<tr>
<td>Chives</td>
<td>33.5</td>
<td>19.4</td>
<td>20.2</td>
</tr>
<tr>
<td>Celery</td>
<td>46.0</td>
<td>10.2</td>
<td>19.3</td>
</tr>
<tr>
<td>Spinach</td>
<td>21.9</td>
<td>11.2</td>
<td>15.5</td>
</tr>
<tr>
<td>Parsley</td>
<td>43.3</td>
<td>5.2</td>
<td>14.4</td>
</tr>
<tr>
<td>Lettuce</td>
<td>28.5</td>
<td>7.5</td>
<td>13.5</td>
</tr>
<tr>
<td>Cabbage</td>
<td>37.6</td>
<td>5.5</td>
<td>11.1</td>
</tr>
<tr>
<td>Hot pepper</td>
<td>23.2</td>
<td>6.9</td>
<td>9.5</td>
</tr>
<tr>
<td>Carrot</td>
<td>28.2</td>
<td>2.4</td>
<td>7.0</td>
</tr>
<tr>
<td>Cut flowers</td>
<td>12.3</td>
<td>4.4</td>
<td>5.3</td>
</tr>
</tbody>
</table>

*NOTE: Micoud District includes Mamiku watershed

*SOURCE:* GOSL, 2007 National Agricultural Census
TABLE 3: Tourism amenities/assets on agricultural estates in Soufrière and Mamiku with relative size ranking

<table>
<thead>
<tr>
<th>Estate name</th>
<th>Hotel</th>
<th>Restaurant</th>
<th>Eco-tours</th>
<th>Botanic garden</th>
<th>Heritage tours</th>
<th>Food gardens</th>
<th>New Forest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mamiku</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Ruby</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Rabot</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Coubaril</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>+</td>
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<tr>
<td>Soufrière</td>
<td>++</td>
<td>+++</td>
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<tr>
<td>Emerald</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>+</td>
<td>+++</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Fond Doux</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>La Haut</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Stonefield</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
</tbody>
</table>

NOTES: Size ranking + = small; ++ = moderate; +++ = large
‘Food gardens’ refers to food and other farm production for consumption by tourists in estate-owned restaurant or hotel
‘New Forest’ refers to new forests on estate lands due to farm land abandonment, deliberate reforestation, etc.

SOURCE: Based on interviews and field observations made in 2015

eco-friendliness. As such, estates now have a strong incentive to protect the forested landscapes they have, regardless of their causal origins.

Protecting forests on public lands for tourism

The more St Lucia embraces tourism, the stronger grows the dilemma that unbridled tourism growth threatens to undermine the natural resource base upon which the long-term viability of the industry depends. The most obvious effects are concentrated along the coast. The GOSL’s influence controlling land use and mitigating impacts there has been patchy but overall fairly weak. While political will is often lacking, well-intentioned efforts have been hamstrung by the prevalence of private land ownership of most coastal lands and the long-felt absence of a comprehensive land use policy that could enable more rational planning and development.

The GOSL has played a more decisive role with environmental protection of uplands, where most of the country’s public lands exist within a network of national Forest Reserves. The Forestry Division has played the lead role here and has supported tourism to further its goals of protecting forests and wildlife. Efforts to encourage public access through development of rain forest trails and guided rain forest walks were begun in the late 1970s and expanded in the mid-1980s as part of a national campaign to raise
awareness and educate St Lucians about the value of the environment and critical conservation issues like deforestation and the status of the endangered St Lucian parrot (*Amazona versicolor*), the national bird (Christian *et al*., 1996). It was a logical step from this to supporting tourism by enhancing visitor amenities and services like improved trails, educational signage and guided hikes through the National Forest Reserves, thereby linking the health of the tourism sector to that of the Forest Reserves.

The Forestry Division established a second key link between tourism and forest health by helping to convince the wider GOSL that the island’s fresh water supplies were dependent on protecting watersheds, especially in the rugged mountains. Shortages of fresh water during the dry season have posed a looming threat to normal operation of the tourism industry, a risk likely to increase as tourism continues to grow and weather anomalies associated with climate change increase. Concern about this has motivated the GOSL to use its regulatory authority and financial resources to acquire private lands in strategic locations (e.g., steep slopes, proximate to water sources, etc.) to expand the land area under protected forest. For example, in the mid-1990s about 100 acres of steeply-sloped uplands around Mount Tabac and a smaller property near the community of Fond St Jacques (both in Soufrière) were secured and protected in this way. The Crown has legal right to acquire private lands that have been abandoned and unclaimed for long periods. Where there is an identifiable owner, expropriation is permissible in the public interest, but the Crown is required by law to provide fair compensation in the form of agreed-upon purchase price or land-swap. Acquisition efforts like this are made easier by recent declines in agriculture because owners are less likely to be farming these lands (Walters & Hansen, 2013). Still, soaring costs of real estate in St Lucia have limited the GOSL’s ambitions in this regard.

Public lands also have become, for the most part, better protected in recent years. Significant added investment and professionalization of the Forestry Division in the 1980s and early 1990s, aided by a grant from the Canadian International Development Agency, led to strengthened monitoring and enforcement of penalties for illegal farming and negotiated settlements to phase-out use of the area by squatters. Both Forestry Division staff and local farmers agree that agricultural encroachment into Reserves, once widespread, has been eliminated, with the exception of occasional ganja growing.

**Tourism employment and agricultural decline**

The rise of tourism and fall of agriculture have profoundly changed St Lucia’s labour market which has, in turn, affected its landscapes. The topic is complex and explored in greater depth elsewhere (Walters, 2016). Briefly, employment opportunities related to tourism are increasingly abundant. They include a range of services in hospitality, transportation, landscaping, security, management, technology support, construction and maintenance. Work in tourism is typically viewed by educated and uneducated St Lucians alike as superior to work in agriculture because it is physically less demanding and wages are usually better or are at least more predictable. Agricultural labour is also widely perceived as being lower-status. Tourism employment has thus drawn many out of the agricultural labour force, contributing to labour shortages there. In fact, farm-la-
bour scarcity was cited by both farmers and policy makers as a major reason for agri-cultural decline in St Lucia (Table 4). As such, the rise in tourism employment has contributed at least in part to the phenomenon of widespread farmland abandonment and reforestation of the St Lucian landscape (Walters & Hansen, 2013).

Conclusion: Is St Lucia’s landscape a tourism landscape?

Weaver’s (1988) seminal study of tourism’s impact on the economy of Antigua shows an entire island transformed in three decades from a landscape dominated by plantation agriculture to one dominated by tourism:

‘The growth of tourism in Antigua and many other destinations did not in itself cause the demise of agriculture. Rather, its decline may be attributed largely to the emergence of tourism as a viable alternative to a chronically unstable agricultural sector, prompting the lateral transfer of investment capital by local and expatriate plantation interests from agriculture to tourism. In this process, coastal plantations were often converted into estate housing developments, while their ‘great houses’ were frequently renovated and reopened as hotels’ (Weaver, 1988:324).

Similar development trajectories have since been documented elsewhere in the Caribbean (McElroy & Albuquerque, 1990; Weaver, 1993b; Koster & Seaborne, 2003). There are some distinct parallels in St Lucia, notably the near-complete conversion of estate lands to tourism, commercial and residential infrastructure along the northern, Castries-Gros Islet corridor. Similar changes are at least partially underway on estate lands in Soufrière and Mamiku. Yet, while tourism’s significance to the economy of St Lucia is now enormous, isolating its specific influence on the landscape is difficult because effects are often indirect and are confounded by other factors.

This complexity is most evident in regards to the diverse interactions between tourism, agriculture and land use change. Significantly, St Lucia’s upland landscape is

<p>| TABLE 4: Primary reasons cited by farmers and key informants for declines in farming in St Lucia |
|--------------------------------------------------|---------------|---------------|</p>
<table>
<thead>
<tr>
<th></th>
<th>Farmers (n=26)</th>
<th>Key Informants (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declining farm-gate prices</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Growing shortages/cost of farm labour</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Ageing of farmer population</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Increasing cost of agro-inputs</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Loss of farmland to development</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>Improved enforcement of Forest Reserves</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Uncertainties over land tenure</td>
<td>-</td>
<td>6</td>
</tr>
</tbody>
</table>

SOURCE: Based on interviews conducted in 2007
more heavily forested today than it has been for at least a century (Walters & Hansen, 2013). This profound change reflects to a large degree the moribund state of conventional, export-oriented agriculture, in particular the collapse of the export banana market in the late 1990s following a series of World Trade Organization rulings that eroded the West Indies’ privileged market access to the UK (Clegg, 2002; Figure 2). This might appear unrelated to tourism, yet strong employment growth in tourism has without doubt accelerated agriculture’s overall decline by contributing to farm labour scarcity (Walters, 2016). At the same time, tourism has stimulated market growth in various niche farm products, including fresh fruits and vegetables, cocoa and cut flowers, and so contributes to that sector’s ongoing viability. Following a lengthy period of downsizing, the agriculture sector appears overall to be stabilizing and even shows signs of renewed growth of some conventional crops like cocoa, copra and ‘provisions’, driven by demand growth in both export and domestic markets. While historically diminished, sizable areas of the landscape continue to be shaped primarily by agriculture. St Lucia’s landscape is thus not (or at least not yet) a fully transformed tourism landscape of the kind described by Weaver (1998; 1993b).

Another source of massive landscape change in St Lucia that is only partly related to tourism is the conversion since the late 1980s of extensive forested and agricultural lands to residential subdivisions. Residential development now far exceeds the direct aerial footprint of tourism infrastructure and, unlike tourism, extends far beyond the coast, often deep into the upland countryside. In fact, half of the agricultural estates within Soufrière and Mamiku have sold land onto the residential housing market. In several cases, they did so to raise capital to enable the estate’s re-development for tourism. Many newer homes have also been financed by incomes derived through tourism employment. But an even larger number of the newer homes have been financed by remittance income and built by migrants returning home from abroad. The residential home construction boom has drawn much labour out of farming and thus contributed to agriculture’s net decline (Walters, 2016).

The causal relationship between tourism development and forest conservation is also difficult to untangle (cf., Buckley, 2012). The literature makes frequent claims of there being a causal link between ecotourism and increased protected areas on both private and public lands (Buckley, 2010; 2011), but many of the forests supposedly ‘protected’ for tourism would likely still be conserved in its absence. For example, the collapse of cocoa farming and widespread afforestation in northern Trinidad long preceded its redevelopment as an ecotourism destination (Harrison, 2007). That said, even if tourism does not explain why particular forests have been conserved, research here shows that it can provide potent economic incentive and political justification for continuing to protect such forests into the future (Weaver, 1993a; 2004).

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References


Walters, B.B. (2016) ‘Migration, land use and forest change in St Lucia, West Indies’, Land Use Policy, 51, 290-300.


